What is Claimed is:

1. A multi-layer tube, comprising:

a metal tube having an outer surface;

a zinc layer bonded to the metal tube outer surface, wherein the zinc layer is selected from the group consisting of zinc plating, zinc nickel alloys, zinc cobalt alloys, zinc aluminum alloys, and mixtures thereof;

a surface treatment layer bonded to the zinc layer, wherein the surface treatment layer is selected from the group consisting of a zinc/aluminum/rare earth alloy, phosphate, chromate, and mixtures thereof;

a priming layer;

a first polymeric layer bonded to the priming layer, wherein the first polymeric layer is selected from the group consisting of thermoplastic elastomers, ionomers, nylons, fluoropolymers, and mixtures thereof; and

a second polymeric layer bonded to the first polymeric layer, wherein the second polymeric layer is selected from the group consisting of nylons, thermoplastic elastomers, fluoropolymers, and mixtures thereof.

2. The multi-layer tube as defined in claim 1, further comprising a third polymeric layer interposed between, and bonded to the first and second polymeric layers, wherein the third polymeric layer is selected from the group consisting of ionomers, nylons, ethylene vinyl alcohol, polyolefins, and mixtures thereof.

3. The multi-layer tube as defined in claim 1, wherein the zinc layer has a thickness ranging between about 10 to 25 microns.

4. The multi-layer tube as defined in claim 1, wherein the surface treatment layer has a weight ranging between about 37.3 g/m^2 and about 97.7 g/m^2.

5. The multi-layer tube as defined in claim 1 wherein the first and second polymeric layers, combined, have a thickness ranging between about 75 to 300 microns.

6. The multi-layer tube as defined in claim 5 wherein the first and second layer thickness ranges between about 125 to 250 microns.

7. The multi-layer tube as defined in claim 2 wherein the first, second and third polymeric layers, combined, have a thickness ranging between about 75 to 300 microns.

8. The multi-layer tube as defined in claim 7 wherein the first, second and third layer thickness ranges between about 125 to 250 microns.

9. The multi-layer tube as defined in claim 1 wherein the zinc/aluminum/rare earth alloy of the surface treatment layer consists essentially of:

between about 85% and about 97% Zn;

between about 4% and about 15% Al; and

at least about 5 ppm of a rare earth-containing alloy.

10. The multi-layer tube as defined in claim 1 wherein the first polymeric layer consists essentially of an ionomer and a nylon.

11. The multi-layer tube as defined in claim 10 wherein the ionomer is ethylene methacrylic acid copolymer--partial metal salt, and wherein the nylon is Nylon 12.

12. The multi-layer tube as defined in claim 11 wherein the ethylene methacrylic acid copolymer--partial metal salt comprises between about 10% and about 70% of the first polymeric layer, and wherein the Nylon 12 comprises between about 90% and about 30% of the first polymeric layer.

13. The multi-layer tube as defined in claim 11 wherein the second polymeric layer consists essentially of a nylon.

14. The multi-layer tube as defined in claim 13 wherein the second polymeric layer consists essentially of Nylon 12.

15. A process for manufacturing a multi-layer tubing for conveying fluids comprising the step of:

extruding multiple layers of a melt-processible thermoplastic to a pretreated metal tube having an external surface with at least a zinc based coating, a

sealant coating on top of the zinc based coating, and a primer coating on top of the sealant coating.

16. The process of claim 15 wherein the melt-processible thermoplastic is selected from the group consisting of Nylon 12, Nylon 6, zinc chloride resistant Nylon 6, thermoplastic elastomers, fluoropolymers, and mixtures thereof.

17. The process as defined in claim 16 wherein the primer coating is applied by an airless spray system in a closed atmosphere, wherein substantially no volatile organic compounds escape into the atmosphere.

18. A process for manufacturing a multi-layer tubing for conveying fluids in a vehicle system comprising the steps of:

coating a metal tube with a zinc based coating selected from a group consisting of zinc, zinc-nickel alloy, zinc-cobalt alloy, zinc-aluminum alloy, and mixtures thereof;

sealing the zinc based coating on the metal tube with at least one sealant coating selected from the group consisting of a phosphate surface treatment, a chromate surface treatment, a zinc-aluminum alloy surface treatment, and combinations thereof;

applying a primer after the sealing step;

coextruding at least one melt-processible thermoplastic layer onto the pretreated metal tube with the at least one layer overlying the pretreated metal tube, wherein the first layer is selected from the group consisting of Nylon 12, Nylon 6, zinc chloride resistant Nylon 6, thermoplastic elastomers, fluoropolymers, ionomers, and mixtures thereof; and

applying vacuum pressure between the pretreated metal tube and the melt-processible thermoplastic during the extruding step to draw the thermoplastic into intimate contact with the pretreated metal tube.

19. The multi-layer tube of claim 1 wherein the priming layer is a nylon primer having as a major constituent titanium dioxide.

20. The multi-layer tube of claim 1 wherein both the first and second polymeric layers comprise a low viscosity, low molecular weight Nylon 12 material.